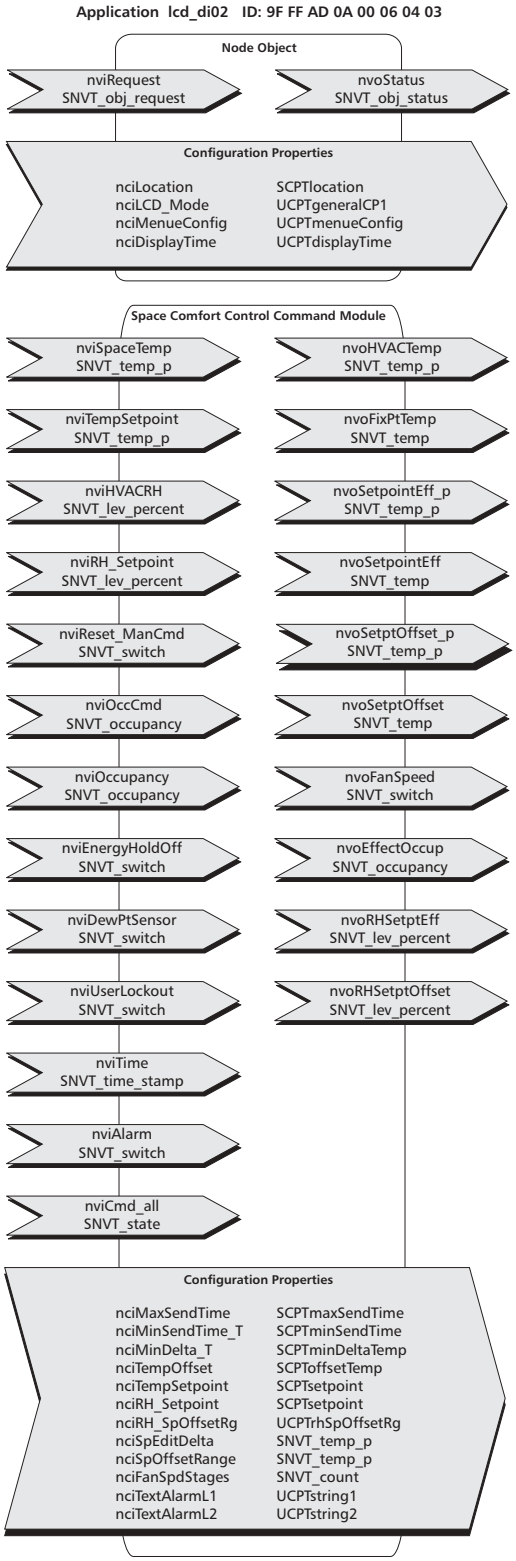
Software application lcd_di02 (room control unit)

For sensors model WRF06 LCD type DI4

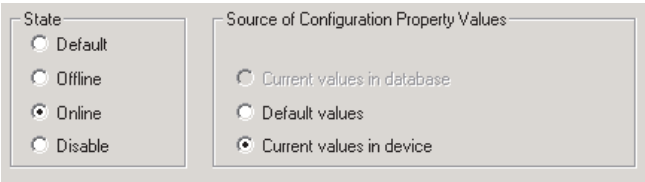
The standard application for WRF06 LCD type DI4 with 4 potential-free, digital inputs includes the functions temperature measuring, setpoint adjustment, adjustment of fan stage, occupancy detection and configurable display of various messages. Moreover, it possible to connect buttons for light and blind control to the four digital inputs of the device. The application uses Standard Network Variables (SNVT) according to the LonMark prescriptions.



Temperature measurement: The measurement is made by an internal sensor or by an external LON sensor via the input variables nviSpaceTemp. Data output effects in the types SNVT_temp and SNVT_temp_p.

!! Upon production, the temperature sensor is calibrated by the !! configuration parameter nciTempOffset. Therefore, the pre- !! adjusted, specific values have to be taken over when connecting !! the devlice to the LON network.

Example LonMaker:



Language selection: By means ofNodeObject.nciLCD_Mod, the LCD display can be switched between the languages German and English.

Display with LCD: By means of the parameter nciMenueConfig, the display and range of functions of the menu control can be adapted to specific projects.

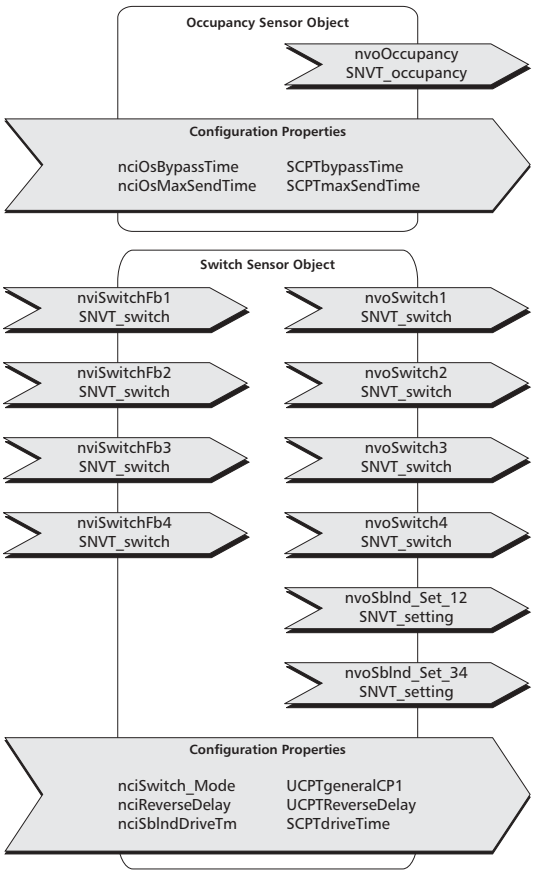
Display possibilities:
- Room and septpoint temperature
- Relative humidity and setpoint for relative humidity
- Fan speed stage
- Room occupancy
- Date and time
- Active window contact respectively dew-point detector
- Fault message with configurable text
- Defective temperature sensor
- Status information to light and sunblind buttons

Adjustment possibilities:
- Setpoint room temperature
- Setpoint relative humidity
- Fan speed stage
- Room occupancy

Various displays and messages are shown cyclicly. The cycle time for switching over of the display is adjusted by ncidiDisplayTime.

Adjustment options: By means of the 4 LCD menu buttons, the sepoints for temperature and relative humidity, the fan stage and the room occupancy can be adjusted via an operator-friendly menu control.

Setpoints: The displayed (effective) setpoint is calculated by the basis setpoint (nvi- oder nci****Setpoint) plus the adjustable offset value. Both values are available as output variables.



Fan stages: The adjustment of the fan stages is also made via menu buttons and is output by nvoFanSpeed.The number of fan stages can be adjusted by nciFanSpeedStages.

Room occupancy: The display of room occupancy is made depending on the input variables nviOccCmd (e.g. Building Control System) and nviOccupacy (e.g. occupancy detector) of Command Modul Objekts [8090].

If the room occupancy should be adjusted via the menu buttons, the output variable nvoOccupancy has to be binded with nvoOccupancy

Depending on the menu configuration, there are two possibilities to change the room occupancy by nvoOccupany:

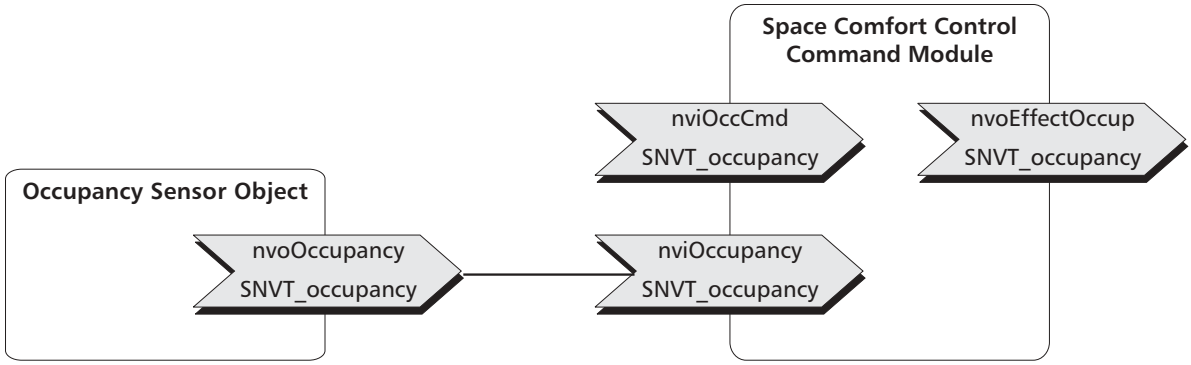
a) Adjustment of room occupancy via the menu
   It is possible to switch between the values Occupied (present) and Unoccupied (absent).

b) No adjustment of room occupancy via menu
   ==> Overtime function with menu button

By actuating any menu button, the output variable nvoOccupancy receives the value occupied. After expiration of the delay time nciBypassTime, it is set back to the value UNOCCUPIED.

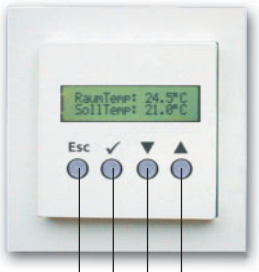
Digital Inputs: The digital inputs are configurable as light or blind buttons by nciSwitch_Mode, whereas the light buttons can either work with toggle or dimm function. If the buttons are configured for controls of sunblinds, the output variables with the control commands for motor drive are output by the types SNVT_switch and SNVT_setting. Thereby, the blind motors can be driven by common I/O-modules or via a LON-sunblind-actuator.

Binding with default of room occupancy via room control unit WRF06LCD

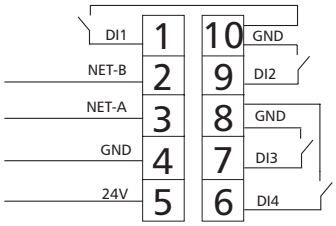


Menu guide and installation

Button configuration



WRF06LCD: Button „+“
WRF06LCD: Button „-“
WRF06LCD: Button „o.k.“
WRF06LCD: Button „Escape“



Type DI4

Connecting of device to LON-Network

After having switched on the operating voltage, the device has to be connected to the LON network via a Network-Management Tool (e.g. LonMaker for Windows).

1. ***Switch-on of operating voltage***

2. ***Preparation of Netzwork-Management-Tool for receipt of Service-PIN-Message***

3. ***Actuating of any button, device sends Service-PIN-Message***

4. ***After successful configuration, the device is ready for operation in the LON network***

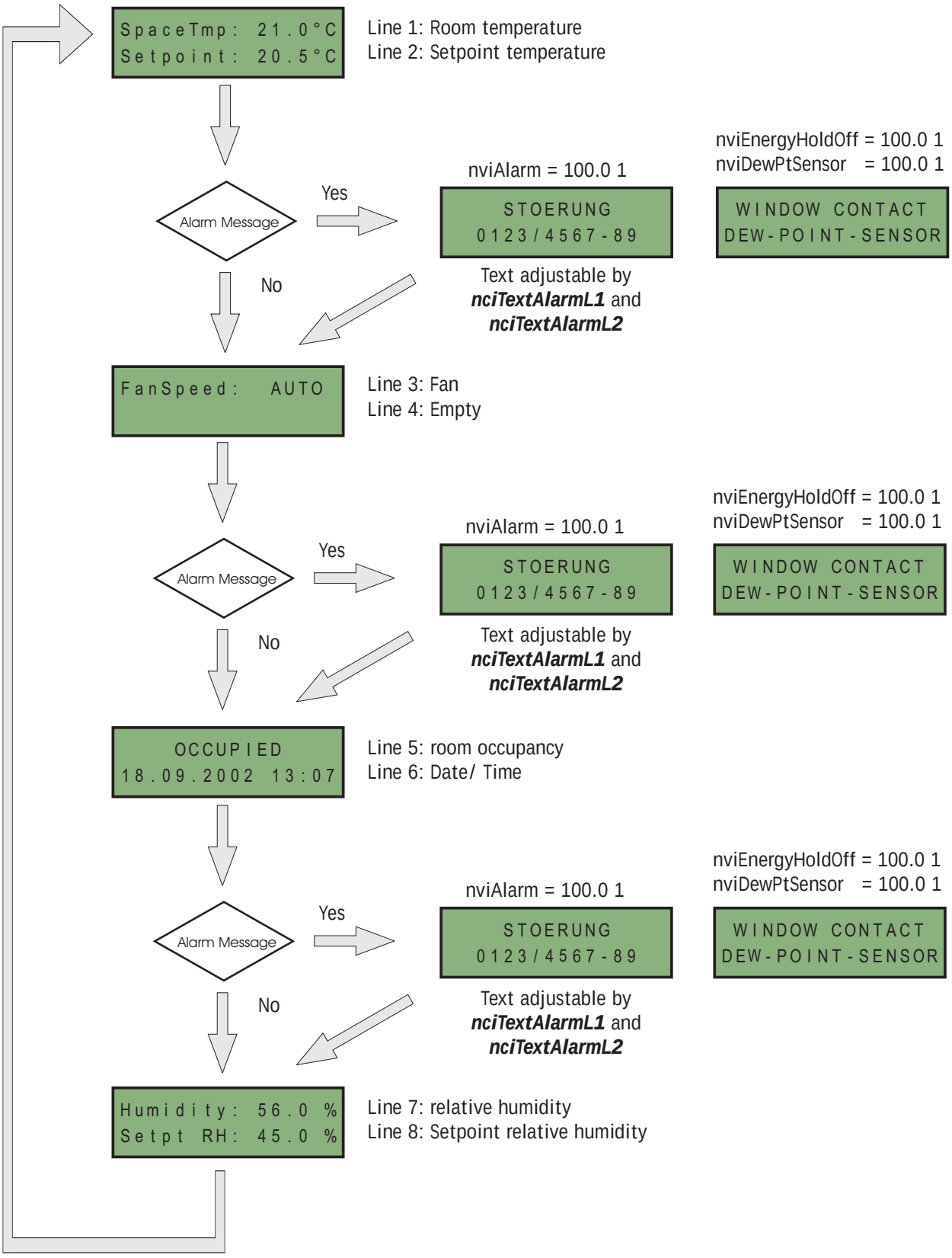
Display room temperature and setpoint temperature in operating status ***„Room occupied“***

Display room temperature and setpoint temperature in operating status ***„Standby“ or „night lowering“***

!! The setpoint temperature is ***blanked out*** and the adjustment of the setpoint ***!!*** temperature is ***locked***

Display of Information and Messages (Example configuration):

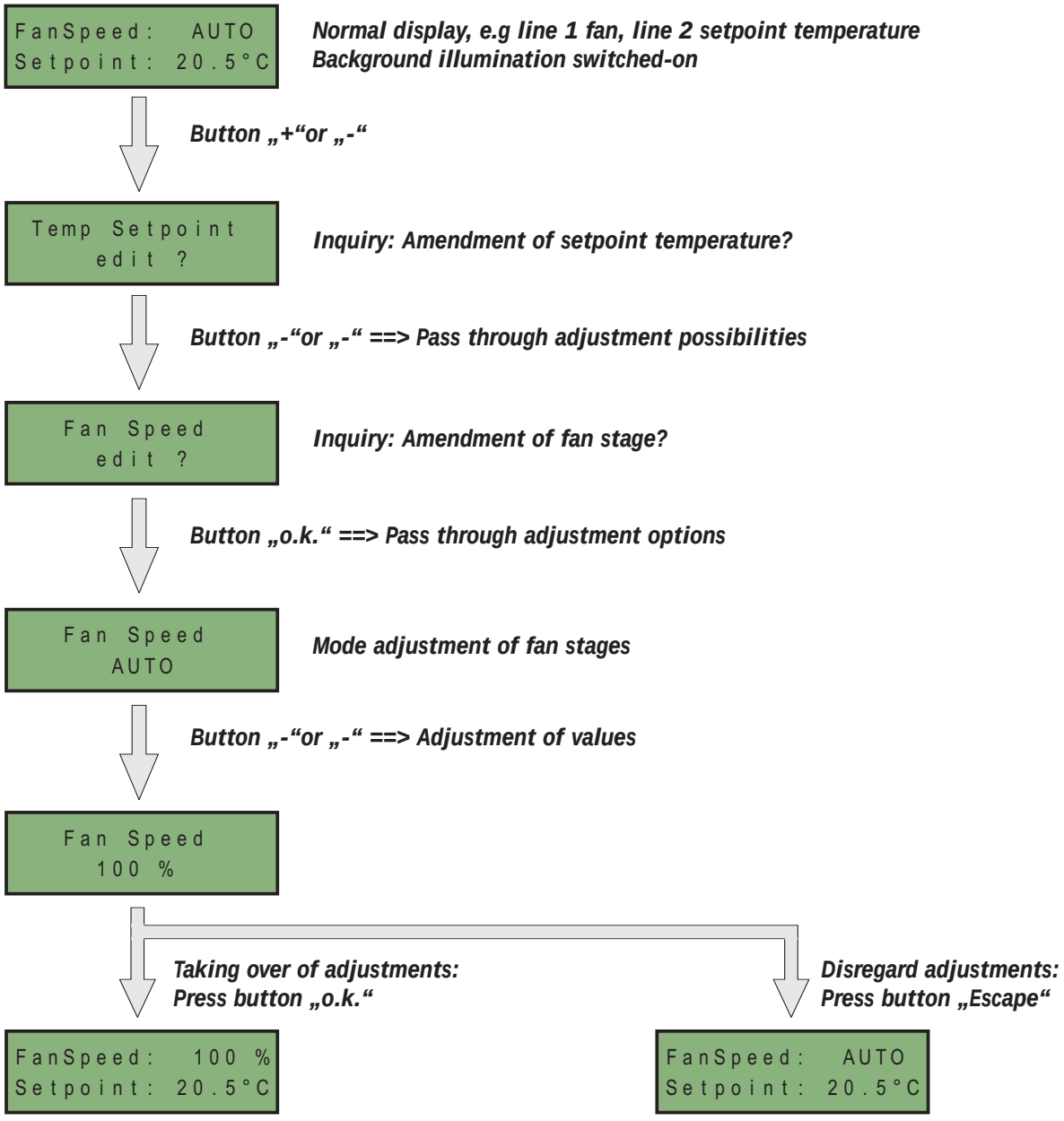
The following configuration shows all displays available. The allocation to the lines can be freely chosen just as the number of lines. If alarm messages are activated, they are cyclicly faded-in.



Manual Adjustment of Setpoints (Example Fan Stage)

The application offers the possibility to adjust the setpoint temperature, fan stage, room occupancy and the setpoint for relative humidity. Which values should indeed be amended by the operator depends on certain projects and is therefore freely selectable.

By once actuating any menu button, the background illumination of the LCD is switched-on.

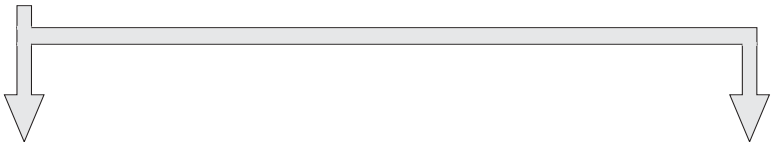


User Lockout

By means of the input variable nviUserLockout the adjustment menu can be locked for the user. The displays are still visible , however when actuating the buttons „-“ or „+“, the message „Menue locked“ is shown.

Function Light button (Example.: Button ligh1 = light circle1)

By once short-term actuating the button „Light ON/OFF/DIM“ (< 1 sec.) the light circle is switched-on /-off accordingly



Switch-on of light circle

```
Lamp1 ON
DimLevel = 100%
```

Switch-off of light circle

```
Lamp1 OFF
DimLevel =  0%
```

By keeping the button „Light ON/OFF/DIM (> 1 sec.)pressed for a longer period of time, the dimm value for light circle is changing continuously.

```
Lamp1 ON
DimLevel =  50%
```

Function Blind button

Opening of blinds, press: Button„Blind ON“
(Pressing of button for more than 2sec. the automatic run is activated)

```
Sunblind UP
```

Closing of blind,press button „Blind OFF“
(Pressing button for more than 2sec. the automatic run is activated)

```
Sunblind DOWN
```

By pressing the blind button for a short period of time, the automatic run is stopped.

```
Sunblind STOP
```

Node Object

The Node Objekt monitors and controls the functions of the individual objects in the device. The basic functions required by the LonMark® are supported.

Network variables Node Object:

nviRequest

SNVT Type: SNVT_obj_request, Index 92
Function: Input variable with the functions RQ_NORMAL, RQ_UPDATE_STATUS and RQ_REPORT_MASK.

nvoStatus

SNVT Type: SNVT_obj_status, Index 93
Function: Output variable with the required status bits „invalid_id“ and „invalid_request“, as well as the status bit „electrical_fault“ for display of a faulty LCD.

Configuration parameters Node Object:

nciLocation

SCPT Type: SCPTlocation, Index 17, SNVT_str_asc
Function: Additional input possibility for storing information for identification of location

nciLCD_Mode

uCPT Type: UCPTgeneralCP1, Index 7, SNVT_state
Function: Configuration parametes for language adjustment of LCD display.
nciLCD_Mode.bit0 = 0 ==> German
nciLCD_Mode.bit0 = 1 ==> English

nciMenueConfig

UCPT Type: UCPTmenueConfig, Index 15, UNVT_menue_config
Function: Parameter for configuration of LCD message and adjustment possibilities via menu buttons.
Datentyp UNVT_menue_config:

```
typedef struct
{
unsigned short   Number_Lines;     // Number of display messages (1-7)                    default:.4
unsigned short   Index_Zeile_1;    // Allocation of display message(0-7)* to line 1       default: 1
unsigned short   Index_Zeile_2;    // Allocation of display message(0-7)* to line 1       default: 2
unsigned short   Index_Zeile_3;    // Allocation of display message (0-7)* to line 1      default: 3
unsigned short   Index_Zeile_4;    // Allocation of display message (0-7)* to line 1      default: 4
unsigned short   Index_Zeile_5;    // Allocation of display message (0-7)* to line 1      default: 0
unsigned short   Index_Zeile_6;    // Allocation of display message (0-7)* to line 1      default: 0
unsigned short   Index_Zeile_7;    // Allocation of display message (0-7)* to line 1      default: 0
unsigned short   Index_Zeile_8;    // = 0, not used
unsigned short   Index_Zeile_9;    // = 0, not used
unsigned short   Index_Zeile_10;   // = 0, not used
uint             Parameter_Z_1:1;  // Adjust. of setpt temperature?  yes = 1, no = 0   default: 1
uint             Parameter_Z_2:1;  // Adjust. of fan stage?          yes = 1, no = 0   default: 1
uint             Parameter_Z_3:1;  // Adjustment room occupancy?     yes = 1, no = 0   default: 0
uint             Parameter_Z_4:1;  // Adjust.of setpt rel. humidity? yes = 1, No = 0   default: 0
uint             Parameter_Z_5:1;  // = 0, not used
uint             Parameter_Z_6:1;  // = 0, not used
uint             Parameter_Z_7:1;  // = 0, not used
uint             Parameter_Z_8:1;  // = 0, not used
uint             Parameter_Z_9:1;  // = 0, not used
uint             Parameter_Z_10:1; // = 0, not used
}UNVT_menue_config;
```

* Display Indexx: 0 = empty line 1 = Room temperature 2 = Setpoint temperature
3 = Fan stage 4 = Room occupancy 5 = Date/time
6 = Rel. humidtity 7 = Setpoint rel. humidity

nciDisplayTime

UCPT Type: UCPTdisplayTime, Index 16, SNVT_time_sec
Function: Time for duration of a display message. (Preset value: 5 sec)

Space Comfort Control Command Module

Temperature measuring, menu guided setpoint and fan stage adjustment as well as detection of effective room occupancy.

Network Variables Space Comfort Control Command Module:

nviHVACTemp

SNVT Type: SNVT_temp_p, Index 105
Function: Input variable for connection of an external LON temperature sensor. The external value is taken over, when the initialization value 0x7FFF (=327,67 °C) has been changed after reset by a NV-Update. As long as the initialization value is not changed, the internal temperature sensor remains active.

nviTempSetpoint

SNVT Type: SNVT_temp_p, Index 105
Function: Input variable for default of setpoint temperature. It is not compelling necessary to bind the network variable with a higher-ranged node. If no update is effected for nviSetpoint, the initialization value 0x7FFF(=327,67°C) remains. For the calculation of the effective setpoint the value of the configuration parameters ***nciTempSetpoint*** is used. If nviTempSetpoint receives an update with a valid setpoint, the effective setpoint is calculated by the value of the input variable.

nviHVACRH

SNVT Type: SNVT_lev_percent, Index 81
Function: Input variable for connection of an external LON humidity sensor. The external value is taken over, when the initialization value 0x7FFF (=163,835%) has been changed after reset of a NV-Update (Value range 0 - 100%). If the value of the variables is lying outside of 0-100 %, the display shows **.* %.

nviRH_Setpoint

SNVT Type: SNVT_lev_percent, Index 81
Function: Input variable for default of a setpoint for relative humidity. It is not compelling necessary to bind this network variable with a higher-ranged node. If no update is effected for nviSetpoint, the initialization value 0x7FFF (=163,835 %) remains. For the calculation of the effective setpoint, the value of the configuration parameters ***nciRH_Setpoint*** is used. If nviRH_Setpoint receives an update with a valid setpoint, the effective setpoint is calculated by the value of the input variables.

nviReset_ManCmd

SNVT Type SNVT_switch, Index 95
Function: An update of the variables with the value 100.0 1 leads to a set back of the operator adjustments.

Setpoint offset temperature:	nvoSetptOffset_p, nvoSetptOffset = 0
Setpoint offset rel. humidity:	nvoRHSetptOffset = 0;
Room occupancy:	nvoOccupancy = OC_UNOCCUPIED
Fan stage:	nvoFanSpeed = 100,0 -1 (AUTO)

nviEnergyHoldOff

SNVT Type: SNVT_switch, Index 95
Function: Input variable of window or door contact for display message.
nviEnergyHoldOff = 100.0 1 ==> Indication „window contact“

nviDewPtSensor

SNVT Type: SNVT_switch, Index 95
Function: Input variable of a dew-point detector for display message.
nviDewPtSensor = 100.0 1 ==> Indication „dew-point detector“

nviUserLockout

SNVT Type: SNVT_switch, Index 95
Function: Input variable for locking of menu buttons
nviUserLockout = 100.0 1 ==> Indication „menue locked“ by button actuation „-“ or „+“

nviOccCmd and nviOccupancy

SNVT Type: SNVT_occupancy, Index 109
Function: Input variable for default of room occupancy. The present room occupancy affects the calculation of the effective setpoint (refer to table 1) and is made available by nvoEffectOccup, to the external temperature controller. The initialization value for both variables is:OC_NUL

nviOccCmd: Default via GLT with: OC_OCCUPIED, OC_STANDBY, OC_UNOCCUPIED
nviOccupancy: Occupancy detection in room witht:OC_OCCUPIED, OC_UNOCCUPIED

room occupancy	nviOccCmd	nviOccupancy	>>>	nvoSetptEff	nvoRHSetptEff
OCCUPIED	OC_NUL	OC_NUL	>>>	nciTempSetpoint +/- nvoSetptOffset or nviTempSetpoint +/- nvoSetptOffset	nciRH_Setpoint +/- nvoRHSetptOffset or nviRH_Setpoint +/- nvoRHSetptOffset
	OC_OCCUPIED	****	>>>		
	****	OC_OCCUPIED	>>>		
STANDBY	OC_STANDBY	OC_NUL OC_UNOCCUPIED	>>>	nciTempSetpoint +/- nvoSetptOffset or nviTempSetpoint +/- nvoSetptOffset	nciRH_Setpoint +/- nvoRHSetptOffset or nviRH_Setpoint +/- nvoRHSetptOffset
UNOCCUPIED	OC_UNOCCUPIED	OC_NUL OC_UNOCCUPIED	>>>	nciTempSetpoint or nviTempSetpoint	nciRH_Setpoint or nviRH_Setpoint

Table 1: Effective setpoint depending on room occupancy

nviTime

SNVT Type: SNVT_time_stamp, Index 84
Function: Input variable for date and time.

nviAlarm

SNVT Type: SNVT_switch, Index 95
Function: Input variable for fault message.
nviAlarm = 100,0 1 ==> Alarm = ON, cyclic indication of configurable fault message
nviAlarm = 0,0 0 ==> Alarm = OFF

nviCmd_all

SNVT Type: SNVT_state, Index 83
Function: Collective variable for all SNVT_switch input variables. The single and collective variable have the same priority, that is to say, always the last update of the network variables determines the function.

nviCmd_all.bit0 ==> Window contact respectively nviEnergyHoldOff
nviCmd_all.bit1 ==> Dew-point detector respectively nviDewPtSensor
nviCmd_all.bit2 ==> Set back of operating adjustment respectively nviReset_ManCmd
nviCmd_all.bit3 ==> User lockout respectively nviUserLockout
nviCmd_all.bit4 ==> Alarm- / fault message respectively nviAlarm

nvoHVACTemp, nvoFixPtTemp

SNVT Type: SNVT_temp_p, SNVT_temp, Index 105, 39
Function: Output variable for measured temperature value. Data output is made depending on the configuration parameter nciMaxSendtime, nciMinSendtime_T and nciMinDelta_T and 4 s after reset.

nvoSetpointEff_p, nvoSetpointEff

SNVT Type: SNVT_temp_p, SNVT_temp, Index 105, 39
Function: Output variable for effective setpoint. The effective setpoint is calculated via the defaults of nviTempSetpoint respectively nciTempSetpoint and the setpoint relocation adjusted at the device (see table1). Data output is made after change of value by the operator, depending on the configuration parameters nciMaxSendtimea and 4 s after reset.

nvoSetptOffset_p, nvoSetptOffset

SNVT Type: SNVT_temp_p, SNVT_temp, Index 105, 39
Function: Output variable for adjusted setpoint realocation. Dataoutput is made analog to nvoSeptpointEff.

nvoFanSpeed

SNVT Type: SNVT_switch, Index 95
Function: Output variable for adjusted fan speed. The number of the fan stages is adjustable by the configuration parameter nciFanSpdStages. Data output is made analog to nvoSetpointEff.

	value	***state***
OFF:	0 %	0
Stage 1:	(1/n) * 100 %	1
Stage 2:	(2/n) * 100 %	1
:	:	:
Stage n:	100 %	1
AUTO:	100 %	0xFF (-1)

nvoEffectOccupancy

SNVT Type: SNVT_occupancy, Index 109
Function: Output variable for effective room occupancy (refer to table 1).
Data output is made after change of value, depending on configuration variable nciMaxSendtime and 4 s after reset.

nvoRHSetptEff

SNVT Type: SNVT_lev_percent, Index 81
Function: Output variable for effective setpoint of relative humidity. The effective setpoint is calculated by the defaults of nviRH_Setpoint respectively nciRH_Setpoint (see table 1) and the setpoint realocation adjusted at the device. Data output is made after change of value by operator, depending on configuration parameter nciMaxSendtime and 4 s after reset.

nvoRHSetptOffset

SNVT Type: SNVT_lev_percent, Index 81
Function: Output variables for adjusted setpoint realocation. Data output is made analog to nvoSRHetpointEff.

Configuration parameter Space Comfort Control Command Module:

nciMaxSendtime

SCPT Type: SCPTmaxSendTime, Index 49, SNVT_time_sec
Function: Heartbeat function. Stipulates interval period after which the output variables are sent independent on result changes. By means of the input values = 0 the heartbeat function is deactivated.(Preset value: 5 min)

nciMinSendtime_T

SCPT Type: SCPTminSendTime, Index 52, SNVT_time_sec
Function: Stipulates the smallest update interval of output variables. An update is made after expiration of „nciMinsendtime_T“, if the temperature value of the output variables has changed by more than „nciMinDelta_T“ By means of the input values = 0 the function is deactivated. (Preset value: 5 sec)

nciMinDelta_T

SCPT Type: SCPTminDeltaTemp, Index 64, SNVT_temp_p
Function: If the temperature changed by the adjusted value „nciMinDelta_T“ , the new temperatures are transmitted.The function depends on the adjustment of the parameters „nciMinsendtime_T“.
(Range >= 0 °C; Preset value: 0,30 °C)

nciTempOffset

SCPT Type: SCPToffsetTemp, Index 70, SNVT_temp_p
Function: Offset for temperature value. By means of this parameter, a software calibration is possible. Therefore, please note the remarks for room temperature senors for flush mounting with transducer.
!! Upon production, the sensor is calibrated. Change of value overwrites manufacturer's adjustments

nciTempSetpoint

SCPT Type: SCPTsetpoint, Index 213, SNVT_temp_p
Function: Configuration parameter for setpoint default (Preset value: 22,00 °C)

nciSpEditDelta

UCPT Type: UCPTspEditDelta, Index 9, SNVT_temp_p
Function: Configuration parameter for definition of temperature steps upon setpoint adjustment via LCD-menue buttons. (Preset value: 0.5K, i.e. by any button actuation, the setpoint is changing by 0.5 K)

nciSpOffsetRange

UCPT Type: UCPTspOffsetRng, Index 12, SNVT_temp_p
Function: Configuration parameter for value range of adjustable setpoint correction, i.e.the stipulated setpoint can be changed by the operator by the value +/- nciSpOffsetRang. (Range: 0 - 10, Preset value: 3)

nciRH_Setpoint

SCPT Type: SCPTsetpoint, Index 213, SNVT_lev_percent
Function: Configuration parameter for setpoint default of relative humidity (Preset value: 45 %)

nciRH_SpOffsetRg

UCPT Type: UCPTrhSpOffsetRg, Index 17, SNVT_lec_percent
Function: Configuration parameter for value range of adjustable setpoint correction for relative humidity, i.e. the preset setpoint can be changed by the operator by the value +/- nciRH_spOffsetRg. (Preset value: 10 %)

nciFanSpdStages

UCPT Type: UCPTfanSpdStages, Index 13, SNVT_count
Function: Configuration parameter for default of fan stages .
(Preset value: 3 ==> OFF, 33 %, 66 %, 100 %, AUTO)

nciTextAlarmL1

UCPT Type: UCPTstring1, Index 1, SNVT_str_asc
Function: Configuration parameter for default of fault message, line 1. (Preset value: „ STOERUNG „)

nciTextAlarmL2

UCPT Type: UCPTstring2, Index 1, SNVT_str_asc
Function: Configuration parameter for default of fault message, line 2. (Preset value: „ „)

Occupancy Sensor Object

Netzwork variables Occupancy Sensor Object:

nvoOccupancy

SNVT Type: SNVT_occupancy, Index 109
Function: Output variable for occupancy detection in the room. The function of the output varialbes nvoOccupancy is depending on the configuration of the menu control.

a) Adjustment of room occupancy via menu

It is possible to switch between the values Occupied (Present) and Unoccupied (absent).

b) No adjustment of room occupancy via menu
==> Overtime function with menu buttons
By actuating any menu button, the output variable nvoOccupancy receives the value OCCUPIED. After expiration of delay time nciBypassTime it is set back to the value UNOCCUPIED. Any actuation of button starts the timer again. nvoOccupancy can be binded to the input variable nviOccupancy for occupancy detection and setpoint selection.

Configuration parameter Occupancy Sensor Object:

nciOsBypassTime

SCPT Type: SCPTbypassTime, Index 34, SNVT_time_min
Function: Delay time in minutes. After expiration of nciOsBypassTime the output variable nvoOccupancy is set back to OC_Unoccupied. (Preset value: 90 min)

nciOsMaxSendTime

SCPT Type: SCPTmaxSendTime, Index 49, SNVT_time_sec
Function: Heartbeat function. Stipulates interval period, after which the output variables are sent. By means of the input variables =0 the heartbeat function is deactivated. (Preset value: 120 s)

Switch Sensor Object

Network Variables Switch Sensor Object :

nviSwitchFb1, nviSwitchFb2, nviSwitchFb3, nviSwitchFb4

SNVT Type: SNVT_switch, Index 95
Function: Input variables for current condition of light groups controlled by nvoSwitch1..4 .

nvoSwitch1, nvoSwitch2, nvoSwitch3, nvoSwitch4

SNVT Type: SNVT_switch, Index 95

Function: The function can be configured by the parameter nciSwitch_Mode.

Light control with dimm function:
A Short-term actuation of button (< 1 s) results in a switch over of the actual light condition. By a long-term actuation of button (> 1 s), the dimm-function is activated, i.e. based on the current light condition, the value of the variable is increased or reduced in 5% steps as long as the button is pressed. The current light condition is shown upon actuation of button on the LCD-display.

nvoSwitch1..4 = 100.0 1 ==> Light = ON and dimmed on 100%
nvoSwitch1..4 = 50.0 1 ==> Light = ON and dimmed on 50%
nvoSwitch1..4 = 0.0 0 ==> Light = OFF

Light control with Toggle-function:
Each actuation of button leads to a swtich-over of the output variables between the values 0.0 0 and 100.01.

Control of blinds:
nvoSwitch1, nvoSwitch3 for button commands “Open sunblind“ for control of sunblind motors via common I/O-modules.

nvoSwitch1/3 = 100.0 1 ==> ON
nvoSwitch1/3 = 0.0 0 ==> OFF

After long-term actuation of button (> 2 s) the blind is controlled continuously for the time nciSIndDriveTm Short-term actuations < 2 s serve for a fine adjustment of the blind respectively for the stop of the automatic run. The present control action is shown at the LCD-display upon actuation of buttons.

nvoSwitch2, nvoSwitch4 for button commands “Close sunbind“ for control of sunblind motors via common I/O-Module.

nvoSwitch2/4 = 100.0 1 ==> ON
nvoSwitch2/4 = 0.0 0 ==> OFF

After long-term actuation of button(> 2 s) the blind is controlled continuously for the time nciSbIndDriveTm short-term actuations < 2 s serve for fine adjustments of the blind, respectively for the stop of the automatic run. The present control action is shown at the LCD-dsiplay. Data transmission is made upon change of output value or approx. 2 sec. after module reset.

nvoSblnd_Set_12, nvoSblnd_Set_34

SNVT Type: SNVT_setting, Index 117
Function: Output variable with switch commands „open“, „close“ and „stop“ for control of blind motors via a LON-sunblind actuator.
nvoSblnd_Setting.function = SET_STOP ==> Switch command „Stop blind“
nvoSblnd_Setting.function = SET_UP ==> Switch command „Open blind“
nvoSblnd_Setting.function = SET_DOWN ==> Switch command „Close bind“
After a delay of 500ms the command SET_NUL is sent after the command SET_STOP.

Configuration Parameters Switch Sensor Object

nciSwitch_Mode

UCPT Type: UCPTgeneralCP1, Index 7, SNVT_state
Function: Parameter to configure the digital inputs DI1 + DI2 und DI3 + DI4 in pairs.

	Light control Toggle	Light control Dimming	Control of blind
DI1 + DI2	bit14 = ***0***, bit15 = ***0***	bit14 = ***0***, bit15 = ***1***	bit14 = ***1***, bit15 = ***0***
DI3 + DI4	bit12 = ***0***, bit13 = ***0***	bit12 = ***0***, bit13 = ***1***	bit12 = ***1***, bit13 = ***0***

nciReverseDelay

UCPT Type: UCPTReverseDelay, Index 14, SNVT_count
Function: Configuration parameter for adjustment of switch-over delay in ms with reversing of rotation sense of blind motors. (Preset valuet: 500 ms)

nciSbIndDriveTm

SNVT Type: SCPTdriveTime, Index 45, SNVT_time_sec
Funtion: Configuration parameter for adjustment of maximum turn-on time of blind motors in automatic run. (Preset value: 100 s)

General Remark:

Wink - Event

The Service LED is controlled and blinks twice.

Configuration Parameter

A download of the application overwrites the adjusted configuration parameters of the manufacturer. The configuration parameters are designed as configuration network variables and are thereby also available as bindable network variables with virtual functional block (from LNS 3.0). Thus parameter changes are possible even without installation tool.
!! An update of the variables is directly written into the non-volatile memory of hardware. User has to make sure that !! the total number of writing cycles does not exceed maximum capacity of non-volatile memory (dimension< 10000).

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